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I worked with powers from 350 to 500 whenever the air would permit. Although at that time I saw easily the coppery grey of the dark belts, and the bluish grey of the poles, I could detect no strong colour on the equatorial belt. Yet for the last two years the tawny colour of the equatorial belt has been more conspicuous than either.

It is true that during the last three years I have had a 12¼-inch equatorial reflector, but, owing to unfavourable atmospheric conditions, practically I have seldom indeed used more than 10 inches of aperture.

Several observers have seen the tawny colour of the belt with both refractors and reflectors of only three or four inches aperture.

The exact colour of the equatorial belt may be obtained by allowing a very powerful light to pass through a jet of steam, so that an increase in the luminosity of the body of the planet would completely account for the colour of the belt.

If, as I suspect, the colour appears periodically, we shall have probably to wait several years before we can decide this matter.

Colour observations are, of course, liable to many sources of error, but though observers may at different times receive different impressions from the same colour, I do not think it possible that any one accustomed to the use of colours would mistake yellow ochre for white.

In the case of *Jupiter*, means of comparison were never wanting: the light-belts N. and S. of the equatorial belt having, during the time of the change in the colour of this belt, always appeared nearly white.

I agree with Mr. Penrose that the colour of the equatorial belt appears paler than it did last year, but as the apparent diameter of the planet is smaller, as it is getting low in the heavens, and it now sets in twilight, I do not think much value should be attached to recent observations.

Mr. Ranyard informs me that he has found some observations of Schwabe on the colours of *Jupiter* in addition to the observations he had previously noted in his very interesting and useful paper on this subject published in the *Monthly Notices*.

On a New Spectroscopic Combination. By the Rev. Father Secchi.

(*Translation.*)

I have the honour to announce the discovery of a new spectroscopic combination by the aid of which it is possible to see the images of the solar spots and protuberances with the spectral rays; the whole in the same visual field. This result is arrived at in two different ways: 1°, by placing before the object-glass of the telescope a rather large prism, such as that which I use for the spectra of the stars, of six inches aperture; and by letting fall

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on the slit of the ordinary spectroscope the coloured image produced at the focus of the telescope. 2°, the other less costly means consists in placing a direct-vision prism of great dispersive power in the course of the luminous rays before they arrive at the focus, and on the slit of the ordinary spectroscope.

By these two means we obtain in the field of the spectroscope the solar image formed of different coloured hues, with their spectral rays, but very precise and detailed, with the spots and edges very precise, so that it is possible to make out the details of the spots, as one would do with a coloured glass. If the solar edge falls near the ray C, which (as I have said) one sees at the same time with the image of the spots, one sees the chromosphere and protuberances mark themselves out like brilliant lines, more or less distant from the edge according to the height of the protuberances. The image of the spots is sharper as the slit is narrower. Thus one sees the protuberances as brilliant lines, but one only recognises their form by linear sections, as in Janssen's old method. It is, nevertheless, possible perfectly to make out and measure their height by measuring the distance of the (now brilliant) line C from the point of the solar boundary which is on the same normal therewith. One can also, by broadening the slit, make out the form of the protuberance, but there is then a loss of precision in the image. But keeping the slit narrow, one can make out with the greatest precision the height and place of the protuberances, and fix their position in respect to the spots and faculæ, in a much more simple and surer manner than with the ordinary spectroscope.

If in a spot there is a jet of hydrogen, one sees there the line C become brilliant, or at least diminish in blackness, and the calcium and iron lines grow broader, &c., as in the ordinary observations, but with greater satisfaction and accuracy of position.

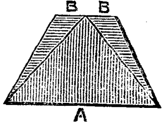
Note on the use of Compound Prisms. By John Browning, Esq.

As some attention is being directed to the use of compound prisms, I think it desirable to place on record in the *Monthly Notices* the steps I have taken towards their introduction.

In 1864 Mr. Gassiot asked me to make for him a very powerful battery of bisulphide of carbon prisms.

Instead of making the sides of these prisms of plane and parallel glass, I cemented crown-glass prisms on to them in the manner shown in the diagram (fig. 1), where A represents the fluid prism, and B B the crown-glass prisms added on either side.

Fig. 1



This battery of prisms was described in the *Proceedings of*

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